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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/443,957	11/19/1999	IGOR ZLOKARNIK	F9618-A	8002

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EXAMINER

NOLAN, DANIEL A

ART UNIT

PAPER NUMBER

2641

DATE MAILED: 12/03/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/443,957

Applicant(s)

ZLOKARNIK ET AL.

Examiner

Daniel A. Nolan

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 November 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,6-9,16 and 18-26 is/are rejected.
- 7) ☒ Claim(s) 2-5,10-15 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 November 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other:

DETAILED ACTION

1. This preamble is required to distinguish between the separate processes of "voice recognition" and "speech recognition." Voice recognition identifies individuals, while speech recognition derives meaning from utterances. The USPTO categorizes these separately as class/subclasses 704/246 and 704/251, respectively.

Drawings

2. Figure 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description:

- The term "Sample" is not used in conjunction with "Threshold" in the specification as it appears in item 206 of figure 8.

4. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

5. Since allowable subject matter has been indicated, applicant is encouraged to submit formal drawings in response to this Office Action. The early submission of formal drawings will permit the Office to review the drawings for acceptability and to resolve any informalities remaining therein before the application is passed to issue. This will avoid possible delays in the issue process.

Specification

6. The abstract of the disclosure is objected to because
- It exceeds 150 words in length.
 - It is improperly capitalized.
 - It contains terms that are more appropriate to claims (such as "at least") and the language is generally not in keeping with the guidelines of the MPEP.
 - The summary of the invention starting from the 2nd paragraph at the middle of page 8 is not a summary at all, but amounts to a mere recitation of the claims that is contrary to the spirit and intent of CFR § 1.73: *"Summary of the invention: A brief summary of the invention indicating its nature and substance, which may include a statement of the object of the invention, should precede the detailed description. Such summary should, when set forth, be commensurate with the invention as claimed and any object recited should be that of the invention as claimed,"*

Further, the language in the summary, being taken directly from the claims, is overly legalistic and not in keeping with the objective of the MPEP.

As the *verbatim* claim terminology is not a summary, the Examiner would err by permitting this cosmetic makeover of the claims to be part of the disclosure as it amounts to having the claims furnish the only specification for themselves.

Where such circular reasoning is not valid, antecedent basis will be lacking.

Correction is required. See MPEP § 608.01(b).

7. The disclosure is objected to because of the following informalities:
 - The term “speech recognition” should be used in place of “voice recognition” throughout the disclosure wherever the purpose and intent is to command or derive meaning from the utterance, as described in the preamble to this action.
 - The plural word “figures” should be used (in the 1st paragraph of page 23).
 - The summary of the invention contains language that is overly detailed and legalistic and therefore is not in keeping with the objective of the MPEP.
 - The acronym “MCU” should be introduced with its full definition at the initial appearance (on page 12). In spite of the obvious redundancy of terms, the Examiner is proceeding with the understanding that this refers to a *memory control unit*.

Appropriate correction is required.

8. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

9. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

- The disclosure that *a pause may substituted for a syllable* (page 6) will not support either a claim where the *pause is measured in terms of syllables*, nor a potential claim of *a pause consisting of multiple syllables* (claims 6 & 17).
A more appropriate unit to designate measurement and duration, or for representation of multiple pauses should be used.
- The specification consistently describes the command as *one word portion and a pause* (end of page 7) but the feature of claim 6 calls for a *first and second word portion separated by pause*. The Examiner is proceeding with the understanding that claim 6 is meant to portray a series of two of the specified command word/pause combinations.

Claim Objections

10. Claims 1-26 are objected to because of the following informalities:
- In claims 6 and 7, the term "at least" should be removed when referring to the pause (being a syllable in length) since that implies that a pause could be multi-syllabic.
 - In all claims using the term "voice recognition", the term "speech recognition" should be used wherever the purpose and intent is to command or derive meaning from the utterance, as described in the preamble to this action.
 - Regarding claim 7, the acronym "MCU" should be introduced with its full definition at the initial appearance in the claims. Because any other choice would be redundant with the other devices in the configuration, the Examiner is proceeding with the understanding that this refers to a *memory control unit*.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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12. Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

13. Claim 17 recites the limitation "said second command" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Bellegarda et al & Launey et al

16. Claims 1, 6, 8, 9, 16 & 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bellegarda et al (U.S. Patent 6,208,971) in view of Launey et al (U.S. Patent 5,086,385).

17. Regarding claim 1, controlling electrical devices with voice has been long practiced to provide independence to persons with disabilities by coupling speech recognition systems (SR) with home automation control interfaces (HA). Launey et al describes such configurations in the Abstract of his disclosure (6th line from the end).

Because Launey et al employs commercial off-the-shelf (COTS) input products, he does not provide internal SR detail. Bellegarda et al, as provider of such SR, describes how the input speech consists of *command word* (abstract line 1) and pauses (column 3 line 26).

18. Regarding claim 6 as understood by the Examiner, the claim is set forth with the same limits as claim 1. The characteristic of speech consisting of words separated by pauses is notoriously well known in the art of speech signal processing and would have been obvious to a person of ordinary skill in that art at the time of the invention.

19. Regarding claim 8, speech recognition is based on the well-known feature of *recording voice recognition data* for use in *comparison* and requires the capacity to

receive audio. It would have been obvious to a person of ordinary skill in the art of speech processing at the time of the invention that a prior recording would provide *recognition*, as that term reflects the contemporary state of technology, that it has yet to introduce a device capable of *speech understanding*.

The subsequent features *generating control signals* are similarly well-known in the art as depicted by the typical figure 1 of Launey et al (58 through 10 to devices).

20. Regarding claim 9, the claim is set forth with the same limits as claim 8. The operation of *training* by recording vocal commands for recognition is notoriously well-known from the earliest forms of speech processing.

21. Regarding claim 16, the claim is set forth with the same limits as claim 8. Bellegarda et al defines the process of a *pause* being detected as a silence between commands (column 3 lines 24-30), which would have made it obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to interpret a *lack of dynamic spectral activity* of a time as indicative of such a *silence*.

22. With regard to claim 18, the features of the claim concerning components for *receiving voice*, for *voice recognition* including the supporting configuration of the claim are found in claim 23 and are rejected for the same reasons. The further feature of *power controllers responding to audible command* is shown by Launey et al (in figure 1) while Bellegarda et al discloses recognition using HMM (top of column 3).

23. Regarding claim 19, the claim is set forth with the same limits as claim 18. The features of the claim are found in claim 7 and the claim is rejected for the same reasons.

24. Regarding claim 20, the claim is set forth with the same limits as claim 19. Bellegarda et al discloses the notoriously well-known and conventional components of the configuration claimed (figure 5 column 7 line 21-on).

25. Regarding claim 21, the claim is set forth with the same limits as claim 19. The features and configuration are so notoriously well known and conventional that it would have been obvious to a person of ordinary skill in the art of configuration management to employ the receiver, controller and power control mounted on a circuit board to avoid difficulties in procuring commercially available alternatives and maintaining such wired products.

Bellegarda et al, Launey et al & Borcharding

26. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bellegarda et al in view of Launey et al and further in view of Borcharding (U.S. Patent 5,890,121).

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27. Regarding claim 7 as understood by the Examiner, the claim is set forth with the same limits as claim 1. While neither Bellegarda et al nor Launey et al describe the components of their inventions in precise terms, the configuration claimed is well known in the art of speech signal processing, as shown by the prior art of record provided by the Applicant with Borcherding in (column 4 line 33-on) and so would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention.

Bellegarda et al, Launey et al & Proxi

28. Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bellegarda et al in view of Launey et al and further in view of Proxi (PROXI product description, July 1999).

29. Regarding claims 22 and 23, the claims are set forth with the same limits as claim 18. Launey et al discloses the notoriously well-known application of controlling lighting (30 in figure 1) while the features using such commercially available speech recognition systems to enable individuals with handicaps to control their environments – including lighting - has been long utilized in the disabled community. Proxi is typical of such a voice-activated environmental control unit available that would be contemporary with and so serve as prior art to the corresponding features of the immediate application.

Bellegarda et al, Launey et al & Cohrs et al

30. Claims 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bellegarda et al in view of Launey et al and further in view of Cohrs et al (U.S. Patent 5,960,393)

31. Regarding claim 24, the claim is set forth with the same limits as claim 18. While neither Bellegarda et al nor Launey et al specifically mention *adjusting the threshold*, Cohrs et al considers the scores of background relative to words in the evaluation process of word recognition and in so doing naturally discloses the obvious step of providing for such adjustment (column 6 line 39-on) to allow for operation under varying conditions.

32. Regarding claim 25, the features of *receiving, voice recognition and controlling* are all well known in the art as depicted by the typical figure 1 of Launey et al (64 to 58 through 10 to devices). The further feature of *adjusting threshold* is found in claim 24 and the claim is rejected for the same reasons.

33. Regarding claim 26, the claim is set forth with the same limits as claim 25. The limitations of the processor are the same as those found for claim 7 and the claim is rejected for the same reasons.

Allowable Subject Matter

34. Claims 2-5, 10-15 & 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

35. The following is a statement of reasons for the indication of allowable subject matter:

- Regarding claims 2 and 10, where the prior art of record is typical in enabling a device on recognition, the feature of speech recognition actively *preventing operation* while the signal processing is ongoing is not anticipated nor was it found in obvious combination in the prior art of record.
- Regarding claims 3 and 11, where prior art can be found that uses the *different scores of words and background* to recognize words in the process of selecting words and excluding background noise. While a case could be made that only recognized words generate control signals, the explicit statement that this difference will directly *generate control signals* was considered to have been neither anticipated nor found in an obvious combination in the prior art of record.
- Regarding claims 5 and 15, the features are understood by the Examiner to be the reciprocal corollary to the recognition-action sequence of claims 3 and 10 and so would be found allowable over the prior art of record for the same reasons provided for those claims.

- With regard to claims 4, 12-14 and 17; the claims depend on claims that were found to be allowable and so would they themselves be allowed as a consequence.

36. As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

Conclusion

37. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Landell et al (U.S. Patent 4,811,399) provides speech recognition adjusting for background noise.
- Salazar et al (U.S. Patent 5,774,841) is capable of interfacing speech commands to a variety of controlling devices.

38. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel A. Nolan whose telephone number is (703) 305-1368. The examiner can normally be reached on Monday, Tuesday, Thursday & Friday, between the hours of 6:30 AM and 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached at (703) 305-6137.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314. Label informal and draft communications as "DRAFT" or "PROPOSED", & designate formal communications as "EXPEDITED PROCEDURE".

Any response to this action may be faxed according to the above instructions, or mailed to:

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or hand-delivered to:

Crystal Park 2,
2121 Crystal Drive, Arlington, VA,
Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist at phone (703) 305-4700.

Daniel A. Nolan
Examiner
Art Unit 2641

dan

December 2, 2001


Richemond Dorvil
Primary Examiner